(22)

Supreme Court, U.S.
FILED
OCT 7 1993
OFFICE OF THE CLERK

No. 92-102

In The
Supreme Court of the United States
October Term, 1992

WILLIAM DAUBERT and JOYCE DAUBERT, Individually and as Guardians Ad Litem for JASON DAUBERT, and ANITA DE YOUNG, Individually and as Guardian Ad Litem for ERIC SCHULLER,

Petitioners,

v.

MERRELL DOW PHARMACEUTICALS, INC.,

Respondent.

On Petition for Writ of Certiorari
to the United States Court of Appeals
for the Ninth Circuit

BRIEF AMICUS CURIAE OF THE AMERICAN COLLEGE OF LEGAL MEDICINE IN SUPPORT OF THE RESPONDENT

MILES J. ZAREMSKI, ESQ.
Counsel of Record
ELAINE RAPPAPORT LEV, ESQ.
DEBORAH H. SHEFRIN, ESQ.
ARNSTEIN & LEHR
120 S. Riverside Plaza
Suite 1200
Chicago, IL 60606
(312) 876-7100

JAY A. GOLD, M.D., J.D., MPH, FCLM
AMERICAN COLLEGE OF LEGAL MEDICINE
611 E. Wells Street
Milwaukee, WI 53202-3810
(414) 276-1881

Counsel for Amicus Curiae

Chicago Legal Copies, Inc. (312) 332-7777

BEST AVAILABLE COPY

31pp

TABLE OF CONTENTS

Page

Table of Authorities ii

Interest of Amicus 1

Statement of the Case 3

Summary of Argument 3

Argument 4

I. ACCEPTANCE BY THE SCIENTIFIC COMMUNITY IS AN ESSENTIAL GUIDE TO THE TRUTH OF SCIENTIFIC STATEMENTS 4

II. THE COURT SHOULD DEVELOP AN EVIDENTIARY THRESHOLD FOR THE ADMISSIBILITY OF SCIENTIFIC TESTIMONY 6

A. THE FEDERAL RULES OF EVIDENCE SUPPORT JUDICIALLY-CREATED DOCTRINES 6

B. THE CRITERIA GUIDING THE COURTS IN EVALUATING THE FOUNDATION OF AN EXPERT'S SCIENTIFIC TESTIMONY SHOULD BE THE SAME AS ARE APPLIED BY THE SCIENTIFIC COMMUNITY 8

C. THE CRITERIA APPLIED BY THE SCIENTIFIC COMMUNITY INCLUDE CONTROLLED STUDY, STATISTICAL SIGNIFICANCE, PUBLICATION AND PEER REVIEW 10

D. THE DETERMINATION OF THE VALIDITY AND RELIABILITY OF THE FOUNDATION OF AN EXPERT'S TESTIMONY CANNOT BE MADE SOLELY BY APPLICATION OF THE FEDERAL RULES OF EVIDENCE 14

Conclusion 20

Appendix A

A-1 LETTER OF CONSENT FROM PETITIONER

A-2 LETTER OF CONSENT FROM RESPONDENT

TABLE OF AUTHORITIES

Cases Cited: *Page*

Berry v. Chaplin, 169 P.2d 442 (Cal. Dist. Ct. App. 1946) 8

Brock v. Merrell Dow Pharmaceuticals, Inc., 874 F.2d 307, *modified*, 884 F.2d 166 (5th Cir. 1989), *cert. denied*, 494 U.S. 1046 (1990).....3

Christophersen v. Allied Signal Corp., 939 F.2d 1106 (5th Cir. 1991), *cert. denied*, 112 S.Ct. 1280 (1992).....16

Daubert v. Merrell Dow Pharmaceuticals, Inc., 727 F.Supp. 570 (S.D. Cal. 1989), *aff'd*, 951 F.2d 1128 (9th Cir. 1991), *cert. granted*, 113 S.Ct. 320 (1992) 18, 19

D'Arc v. D'Arc, 385 A.2d 278 (N.J. Super. Ct. Ch. Div. 1978), *aff'd*, 421 A.2d 602 (N.J. Super. Ct. App. Div. 1980).....6

Elam v. Alcolac, Inc., 765 S.W.2d 42 (Mo. Ct. App. 1988).....9

Ellis v. International Playtex, Inc., 745 F.2d 292 (4th Cir. 1984).....13

Ferebee v. Chevron Chem. Co., 736 F.2d 1529 (D.C. Cir. 1984), *cert. denied*, 469 U.S. 1062 (1984).....3

Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).....7

Gideon v. Johns-Manville Sales Corp., 761 F.2d 1129 (5th Cir. 1985).....6

In Re "Agent Orange" Product Liability Litigation, 611 F. Supp. 1223 (E.D.N.Y. 1985), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied sub. nom, Lombardi v. Dow Chemical Co.*, 487 U.S. 1234 (1988) 18

In Re Air Crash Disaster at New Orleans, La., 795 F.2d 1230 (5th Cir. 1986).....6

Johnston v. United States, 597 F. Supp. 374 (D.C. Kan. 1984).....13

Lynch v. Merrell-National Laboratories Division of Richardson-Merrell, Inc., 830 F.2d 1190 (1st Cir. 1987).....13

Page

Menarde v. Philadelphia Transportation Co., 103 A.2d 681 (Pa. 1954).....9

National Dairy Products Corp. v. Durham, 154 S.E.2d 752 (Ga. 1967) 9

Norris v. Gatts, 738 P.2d 344 (Alaska 1987).....9

People v. Kelly, 549 P.2d 1240 (Cal. 1976).....19

Perry v. United States, 755 F.2d 888 (11th Cir. 1985) 13

Renaud v. Martin Marietta Corp., 749 F. Supp. 1545 (D.C. Colo. 1990), *aff'd*, 972 F.2d 304 (10th Cir. 1992).....18

Richardson v. Richardson-Merrell, Inc., 857 F.2d 823 (D.C. Cir. 1988), *cert. denied*, 493 U.S. 882 (1989) 13

Salem v. United States Lines Co., 370 U.S. 31 (1962).....6

Seiler v. Lucasfilm, Ltd., 797 F.2d 1504 (9th Cir. 1986), *modified*, 808 F.2d 1316 (9th Cir. 1986), *cert. denied*, 484 U.S. 826 (1987).....15

Slaughter v. Southern Talc Co., 919 F.2d 304 (5th Cir. 1990).....7, 16

Smith v. State, 355 A.2d 527 (Md. Ct. Spec. App. 1976).....19

State v. Aquilera, 25 Cnml. Rep. (BNA) 2189 (Dade Cty. Fla. 1979).....8

State v. Garrison, 585 P.2d 563 (Ariz. 1978) 19

State v. Spencer, 216 N.W.2d 131 (Minn. 1974).....19

State v. Vail, 274 N.W.2d 127 (Minn. 1979) 8

Sterling v. Velsicol Chemical Corp., 855 F.2d 1188 (6th Cir. 1988).....9

Stites v. Sundstrand Heat Transfer Inc., 660 F. Supp. 1516 (W.D. Mich. 1987).....7

United States v. Addison, 498 F.2d 741 (D.C. Cir. 1974) 6

United States v. Amaral, 488 F.2d 1148 (9th Cir. 1973) 6

Page

United States v. Baller, 519 F.2d 463 (4th Cir. 1975), *cert. denied*, 423 U.S. 1019 (1975) 5

United States v. Downing, 753 F.2d 1224 (3d Cir. 1985) 16

United States v. Eskow, 422 F.2d 1060 (2d Cir. 1970), *cert. denied*, 398 U.S. 959 (1970) 14

United States v. Haldeman, 559 F.2d 31 (D.C. Cir. 1976). *cert. denied*, 431 U.S. 933 (1977) 14

United States v. Jakobetz, 955 F.2d 786 (2d Cir. 1992) 16

United States v. Krulewitch, 145 F.2d 76 (2d Cir. 1944) 19

United States v. Pryba, 678 F. Supp. 1225 (E.D. Va. 1988) 7

United States v. Tranowski, 659 F.2d 750 (7th Cir. 1981) 9

United States v. Trice, 476 F.2d 89 (9th Cir. 1973), *cert. denied*, 414 U.S. 843 (1973) 6

United States v. Williams, 443 F. Supp. 269 (S.D.N.Y.) 1977, *aff'd*, 583 F.2d 1194 (2d Cir. 1978), *cert. denied*, 439 U.S. 1117 (1979) 7

United States v. Zeiger, 350 F. Supp. 685 (D.D.C. 1972), *rev'd*, 475 F.2d 1280 (D.C. Cir. 1972) 7

United States of America v. Two Bulls, 918 F.2d 56 (8th Cir. 1990) 19

Viterbo v. Dow Chemical Co., 826 F.2d 420 (5th Cir. 1987) 18, 19

Zenith Radio Corp. v. Matsushita Electric Industrial Co., Ltd., 505 F. Supp. 1313 (E.D. Pa. 1980) 18

Rules Cited:

Federal Rules of Evidence:

Rule 104(a) 6, 7, 14

Rule 401 ..... 6, 15

Rule 403 ..... 6, 15, 19

Rule 702 ..... 6, 15, 16

Rule 703 ..... 6, 15, 17, 18

Page

Other Authorities Cited:

American Bar Association, *Fix The Law Of Experts*, Litigation, Fall 1992, Vol. 19, No. 1 17

Angier, *Supreme Court Is Set To Determine What Science Juries Should Hear*, N.Y. Times, January 2, 1993, p.1, col.1 9

Black, *A Unified Theory Of Scientific Evidence*, 56 Fordham L. Rev. 595 (1988) 12, 15

Curran, *Law-Medicine Notes* (1989) 8

Friedman, *Primer of Epidemiology* (3d ed. 1987) 10

Gold, *Limiting Judicial Discretion To Exclude Prejudicial Evidence*, 18 U.C. Davis L. Rev. 59 (1984) 3

Gold, *Science Tests Now Get Their Day In Court*, N.Y. Times, January 23, 1992, p. A12, col. 3. 8

Green, *Expert Witnesses and Sufficiency of Evidence In Toxic Substances Litigation: The Legacy Of Agent Orange and Bendectin Litigation*, 86 NW. U. L. Rev. 643 (1992) 14

Hand, *Historical and Practical Considertions Regarding Expert Testimony*, 15 Harv. L. Rev. 40 (1901) 5

Hassard, *Understanding Biostatistics* (1991) 10

Huber, *Galileo's Revenge: Junk Science In The Courtroom* (1991) 9

Last, *Maxcy-Rosenau Public Health and Preventive Medicine* (12th ed. 1986) 11

Lock, *A Dificult Balance: Editorial Peer Review In Medicine* (3d ed. 1991) 13

Matthews and Farewell, *Using and Understanding Medical Statistics* (2d ed. 1988) 11

Page

Pope John Paul II, *Lessons of the Galileo Case*, 22 Origins 309, Vol. 22, No. 22 (November 12, 1992) 4

Cardinal Paul Poupard, *Galileo: Report on Papal Commission Findings*, 22 Origins 374, Vol. 22, No. 22 (November 12, 1992) 4

Weinstein & Berger, *Weinstein's Evidence* (1992) 16

No. 92-102

In The

Supreme Court of the United States

October Term, 1992

WILLIAM DAUBERT and JOYCE DAUBERT, Individually and as Guardians Ad Litem for JASON DAUBERT, and ANITA DE YOUNG, Individually and as Guardian Ad Litem for ERIC SCHULLER,

Petitioners,

v.

MERRELL DOW PHARMACEUTICALS, INC.,

Respondent.

On Petition for Writ of Certiorari
to the United States Court of Appeals
for the Ninth Circuit

BRIEF AMICUS CURIAE OF THE AMERICAN COLLEGE OF LEGAL MEDICINE IN SUPPORT OF THE RESPONDENT

INTEREST OF AMICUS

The American College of Legal Medicine (ACLM) respectfully submits this brief as amicus curiae in support of the respondent. ACLM has received consent of both parties to submit this brief pursuant to the Rules of this Court.

Founded in 1960, the ACLM is the official organization for professionals concerned with issues arising at the convergence of law and medicine. ACLM is a professional community of about 1300 physicians, attorneys, allied health professionals, administrators, scientists, and others with a sustained interest in

medicolegal affairs. The organization is officially recognized by the American Medical Association (AMA) as the society that represents legal medicine specialists and it holds a seat in the AMA House of Delegates.

As an organization whose membership consists of both attorneys and physicians, ACLM plays a significant role in the dialogue of medicolegal affairs. With very few exceptions, those individuals who are Fellows of ACLM, as opposed to other members, are trained and have degrees in both law and medicine, and are able to apply the insights of one profession to the problems of the other. Thus, ACLM is a unique organization confronting issues at the intersection of law and medicine. Furthermore, ACLM is not a partisan organization as its membership consists of plaintiff and defense attorneys, corporate and public interest attorneys and medical professionals in almost every specialty. Many members of ACLM confront scientific evidence in the courtroom on a regular basis as advocates or as expert witnesses. Therefore, ACLM can provide guidance, both seasoned and objective, that will be available nowhere else.

ACLM is concerned that invalid and unreliable scientific testimony is confounding our legal system and its search for truth. The Federal Rules of Evidence and current judicial practice do not provide an effective check on the credibility of the foundation of an expert's testimony. This organization considers the objective evaluation of the basis of an expert's scientific testimony, prior to any determination of its admissibility, an issue of paramount importance to all parties and their attorneys in litigation. Therefore, ACLM believes that the judiciary should establish criteria for evaluating the foundation of an expert's testimony. It is entirely consistent with the allocation of responsibility under the Federal Rules of Evidence for the judiciary to require that a specific threshold of reliability be satisfied before permitting the expert's testimony.

STATEMENT OF THE CASE

Amicus adopts the statement in Respondent's Brief In Opposition To Petition, pp. 4-9.

SUMMARY OF ARGUMENT

The purpose of codifying the Federal Rules of Evidence in 1975 was to achieve consistency. Jay A. Gold, *Limiting Judicial Discretion to Exclude Prejudicial Evidence*, 18 U.C. Davis L. Rev. 59, 83 (1984). While the Federal Rules of Evidence require a threshold scrutiny of expert testimony by trial judges, the Rules have not provided sufficient guidance to achieve their purpose. Inconsistencies among the federal courts regarding expert testimony stem from unresolved questions concerning application of the Rules.[1]

ACLM urges the courts to assume greater responsibility in defining an evidentiary threshold in order to ensure comparable treatment in evaluating the foundation of an expert's scientific testimony, no matter which court is applying the Federal Rules of Evidence. In so doing, ACLM urges this Court to adopt the criteria used by scientists themselves in determining scientific credibility. That is, courts should consider whether an expert's testimony relies upon a study which has undergone controlled experimentation, produced statistically significant results, and was published and peer reviewed by the relevant scientific community. ACLM urges this Court to adopt the criteria discussed herein, as an evidentiary threshold, or floor, of reliability to determine the trustworthiness of the foundation of an expert's testimony. By adopting the criteria suggested herein, this Court will enable trial courts and juries to make more informed and accurate decisions based upon a clearer understanding of the scientific strengths and weaknesses of the foundation of an expert's testimony. As a consequence, the interest of justice will be far better served.

---

[1] *See Brock v. Merrell Dow Pharmaceuticals, Inc.*, 874 F.2d 307, 310-11 (5th Cir. 1989) (advocating careful judicial inspection of expert testimony), *cert. denied*, 494 U.S. 1046 (1990); *Ferebee v. Chevron Chem. Co.*, 736 F.2d 1529, 1534-35 (D.C. Cir. 1984) (allowing the jury to assess the weight of expert testimony), *cert. denied*, 469 U.S. 1062 (1984).

ARGUMENT

> What is important in a scientific . . . theory is above all that it should be true or at least seriously or solidly grounded.
>
> Pope John Paul II[2]

I. ACCEPTANCE BY THE SCIENTIFIC COMMUNITY IS AN ESSENTIAL GUIDE TO THE TRUTH OF SCIENTIFIC STATEMENTS

On October 31, 1992, a papal commission issued a report on Galileo, condemned in the seventeenth-century by the Roman Catholic Church for advocating the Copernican hypothesis. The report admitted that none of Galileo's adversaries, at his time or since, has "discovered anything that could constitute a convincing refutation of Copernican astronomy."[3] Pope John Paul II agreed that the case of Galileo has "long been shelved and . . . the errors committed [have] been recognized."[4]

Galileo's condemnation has become the paradigm of the failure to accept scientific evidence which turned out to be true. Those whose scientific conclusions do not conform to the conventional standards of the scientific community are quick to invoke Galileo's name, and to claim that they, too, will enjoy future vindication. Invocations of the Galileo case are, though, inappropriate. Acceptance of his hypotheses eventually occurred due to their conformance with the criteria set forth herein. Triers of fact, however, cannot be guided by theories that *may* be shown to be true years into the future depending on the outcome of scientific investigation. The importance of scrutiny by the scientific community as a guide to the truth of scientific statements could not be better exemplified than by the recent observations about the Copernican theory.

The scientific enterprise is predicated on the idea that careful observation and calculation of specially-collected data will yield

---

[2] Pope John Paul II, *Lessons of the Galileo Case,* 22 Origins 309, 373, Vol. 22, No. 22 (November 12, 1992).

[3] Cardinal Paul Poupard, *Galileo: Report on Papal Commission Findings,* 22 Origins 374, 375, Vol. 22, No. 22 (November 12, 1992).

[4] Pope John Paul II, *Lessons of the Galileo Case,* 22 Origins 369, 371, Vol. 22, No. 22 (November 12, 1992).

truths that cannot be arrived at by ordinary, everyday reasoning about common experience. Every scientific discovery since the Scientific Revolution, from Galileo's own discovery that heavy bodies fall at the same rate as lighter ones, testifies to the validity of this idea.

Testimony in the courtroom, like science, should be directed to discovering truth – in this instance, truth about matters in controversy in a particular case. Where scientific questions are at issue, evidence traditionally has been presented by expert testimony. As the truths of science frequently contradict the superficial conclusions of common sense, it is often necessary for experts to interpret scientific results in their field for the court and jury.

The principal argument for reviewing the foundation of an expert's testimony prior to its introduction to the jury is concern over the ability of lay jurors to appropriately evaluate the validity and reliability of the basis of an expert's scientific testimony. Jurors cannot fully appreciate the limitations of expert testimony, so the court must initially review the credibility of the foundation of such testimony. As Judge Learned Hand observed, expert testimony creates the risk of a special kind of prejudice:

> The trouble . . . is that it is setting the jury to decide, where doctors disagree. The whole object of the expert is to tell the jury, not facts . . . but general truths derived from specialized experience. But how can the jury judge between two statements each founded upon an experience confessedly foreign in kind to their own? It is just because they are incompetent for such a task that the expert is necessary at all.

Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony,* 15 Harv. L. Rev. 40, 53 (1901). Hence, it is of the utmost importance that the testimony submitted for the trier of fact's consideration be scientifically credible from the start.

In the minds of many, if not most, courts, the problem is compounded because lay jurors are in awe of scientific testimony and tend to overestimate its probative value. *See United States v. Baller,* 519 F.2d 463, 466 (4th Cir. 1975) ("because of its apparent objectivity, an opinion that claims a scientific basis is apt to

carry undue weight with the trier of fact") *cert. denied,* 423 U.S. 1019 (1975); *United States v. Addison,* 498 F.2d 741, 744 (D.C. Cir. 1974) (scientific evidence may assume a posture of mystic infallibility in the eyes of a jury of laymen); *United States v. Amaral,* 488 F.2d 1148, 1152 (9th Cir. 1973) ("scientific or expert testimony particularly courts the . . . danger [of undue prejudice or of confusing the issues or misleading the jury] because of its aura of special reliability and trustworthiness"); *D'Arc v. D'Arc,* 385 A.2d 278 (N.J. Super. Ct. Ch. Div. 1978) (in refusing to admit voiceprint evidence, the court emphasized that this evidence could assume an "aura of mystic infallibility in the eyes of a jury of laymen.") *aff'd,* 421 A.2d 602 (N.J. Super. Ct. App. Div. 1980). Even objective jurors, without sympathy or malice for either party, may resolve issues of fact on the basis of an expert's impressive demeanor or credentials rather than upon the substance of his or her testimony. In order to insure that the outcome of a trial hinging upon scientific testimony does not conflict with the opinions recognized by the scientific community, objective criteria for evaluating the basis of an expert's testimony are needed.

II. THE COURT SHOULD DEVELOP AN EVIDENTIARY THRESHOLD FOR THE ADMISSIBILITY OF SCIENTIFIC TESTIMONY

A. The Federal Rules of Evidence Support Judicially-Created Doctrines.

The goal of our legal system is just resolution of disputes. In achieving that goal, it is necessary to discover the truth, the whole truth, and nothing but the truth, and the Federal Rules of Evidence have been fashioned with that in mind. Thus, the Rules require a threshold scrutiny of an expert's testimony by trial judges under Fed. R. Evid. 104(a), 401, 702, 703 and 403 to determine its relevance, usefulness and credibility. *See Salem v. United States Lines Co.,* 370 U.S. 31 (1962); *In Re Air Crash Disaster at New Orleans,* 795 F.2d 1230, 1233-34, (5th Cir. 1986); *Gideon v. Johns-Manville Sales Corp.,* 761 F.2d 1129, 1135 (5th Cir. 1985); *United States v. Trice,* 476 F.2d 89 (9th Cir. 1973), *cert. denied,* 414 U.S. 843 (1973). The Rules, however, do not provide sufficient guidance to judges faced with the task of assessing technical, scientific, expert testimony. A court should

not allow the introduction of scientific, expert testimony unless it finds, as a preliminary matter, that the bases of the expert's opinion are valid and reliable. *See Slaughter v. Southern Talc Co.,* 919 F.2d 304, 307 (5th Cir. 1990).

The drafters of the Rules appreciated the need for flexibility on the part of the trial-court judges in exercising their "gatekeeper" responsibility. *See* Advisory Committee's Notes, accompanying Fed. R. Evid. 104(a). Accordingly, the Rules permit judicially-created doctrines, such as the one created in *Frye v. United States,* 293 F. 1013 (D.C. Cir. 1923), to help lead trial courts through the maze of credentials, opinions, methodology, research designs, and unbridled self-interest that inevitably confuse the trier of fact in weighing expert testimony. *See also United States v. Pryba,* 678 F. Supp. 1225, 1232-35 (E.D. Va. 1988); *Stites v. Sundstrand Heat Transfer Inc.,* 660 F. Supp. 1516, 1523 (W.D. Mich. 1987).

Although *Frye* and the Federal Rules of Evidence attempt to set forth standards for the admissibility of expert testimony, both are insufficient to guide judges faced with the task of assessing the validity and reliability of the basis of an expert's technical, scientific testimony. The consensus-standard mandated by *Frye* leaves too many questions unanswered. For example: (1) what percentage of those in the field must accept the technique;[5] and (2) whether general acceptance refers to the technique, the underlying principles or both. The adoption of the Federal Rules of Evidence did not resolve the questions raised by *Frye.* Quite the contrary, the Rules further confuse the issue. First, the Rules are silent on whether the general-acceptance test has been superceded. Second, the "reasonably-relied-upon-by-experts" standard offers no more clarity or guidance to the courts than *Frye.*

ACLM urges this court to focus the standard on the *reliability* of the basis of an expert's testimony. In order for judges to assess the reliability of the foundation of an expert's scientific testimony,

---

[5] One court defined "general acceptance" as "widespread; prevalent; extensive though not universal." *United States v. Zeiger,* 350 F. Supp. 685, 688 (D.D.C. 1972), *rev'd,* 475 F.2d 1280 (D.C. Cir. 1972) while another defined it as a "substantial section of the scientific community." *United States v. Williams,* 443 F. Supp. 269, 273 (S.D.N.Y. 1977) *aff'd,* 583 F.2d 1194 (2d Cir. 1978), *cert. denied,* 439 U.S. 1117 (1979).

courts need objective criteria to guide their decision-making. The criteria should permit only those techniques that provide accurate results and those methods or modes of reasoning that provide reliable conclusions. ACLM asserts that establishing objective criteria for evaluating the reliability of the foundation of an expert's testimony is necessary and is consistent with the Federal Rules of Evidence.

B. The Criteria Guiding The Courts In Evaluating The Foundation Of An Expert's Scientific Testimony Should Be The Same As Are Applied By The Scientific Community

The desideratum in promulgating criteria for evaluating the foundation upon which scientific testimony is based is quite clear: what will be most likely to include expert testimony that is based upon scientific tests and techniques whose results are *valid*, and to exclude testimony whose bases are *invalid*? More broadly, what criteria will make it most likely that the testimony will assist the trier of fact to reach a conclusion that is, indeed, the correct conclusion?

In developing criteria for scientific proof, there are two dangers that must be avoided. One danger is that testimony may be excluded inside the courtroom that is clearly accepted outside the courtroom in scientific circles. This danger has frequently materialized – judges have come under severe criticism for their excessive caution about allowing juries to hear and to evaluate testimony that is based upon scientific test procedures, and to give such test results less probative weight than they warrant.[6] The most notorious – but far from the only – instance of injustice in this regard was the 1946 case of *Berry v. Chaplin*, 169 P.2d 442 (Cal. Dist. Ct. App. 1946), in which the actor Charlie Chaplin was forced to pay child support for a child which blood testing had conclusively shown could not have been his.[7]

---

[6] *See e.g.*, W. Curran, *Law-Medicine Notes*, xvii (1989).

[7] The blood test was admitted into evidence but the jury was permitted to consider the mother's "equally persuasive" testimony that Chaplin was the father. *See* Gold, *Science Tests Now Get Their Day In Court*, N.Y. Times, January 23, 1992, p. A12, col. 3; *See also, State v. Aquilera*, 25 Cnml. Rep. (BNA) 2189 (Dade Cty. Fla. 1979) radar case; *State v. Vail*, 274 N.W.2d 127 (Minn. 1979) drug testing case.

The second danger, which also has come to pass far too often, is that triers of fact have been allowed to consider procedures and opinions that have little or no credibility in scientific circles, and that, in many instances, are unsupported by any semblance of scientific verification.[8] *See Sterling v. Velsicol Chemical Corp.*, 855 F.2d 1188 (6th Cir. 1988) (the district court awarded damages to all plaintiffs for immune system impairment based upon the testimony of a clinical ecologist. The Sixth Circuit reversed the awards since the expert's testimony was based upon clinical ecological tests which had been rejected by professional societies as unproven methodology lacking any scientific basis in fact or theory); *United States v. Tranowski*, 659 F.2d 750 (7th Cir. 1981) (the district court permitted testimony by an astronomer who claimed he could analyze the dates on which photographs in evidence were taken. The Seventh Circuit reversed since the expert's chart was unverified for its accuracy in dating photographs).

The goal must be to avoid both of these divergent dangers, and to maximize the likelihood that the conclusions reached by the trier of fact will be based upon the truth. The criteria guiding the courts in evaluating the foundation of an expert's scientific testimony, therefore, should be the same criteria as those applied by members of the scientific community who are learned in the relevant area, and, who more than anyone else, can be expected

---

[8] P. Huber, *Galileo's Revenge: Junk Science In The Courtroom* (1991) details many shocking instances of expert testimony with little or no scientific verification: *e.g. Norris v. Gatts*, 738 P.2d 344 (Alaska 1987) (without studies to support the basis of his opinion, the expert testified that the throttle in defendant's car had jammed at exactly the same instant the car's brakes temporarily failed); *Elam v. Alcolac, Inc.*, 765 S.W.2d 42 (Mo. Ct. App. 1988) (contrary to the opinion of the relevant scientific community, expert testimony by a clinical ecologist was that the pollution produced by the defendant-manufacturer, damaged the immune systems of families living in the area); *Menarde v. Philadelphia Transportation Co.*, 103 A.2d 681 (Pa. 1954) (family physician testified without proof that the accident in which plaintiff was bruised while alighting from a streetcar was the direct cause of her breast cancer); *National Dairy Products Corp. v. Durham*, 154 S.E.2d 752 (Ga. 1967) (physician testified without supporting verification that "trauma induced by pressure from a seat belt might have led to an inflammatory condition of plaintiff's testicles," which might "conceivably" have triggered cancer in his left testicle). *See also*, N. Angier, *Supreme Court Is Set to Determine What Science Juries Should Hear*, N.Y. Times, January 2, 1993, p. 1, col. 1.

to understand the reliability of scientific tests and the validity of their results.

C. The Criteria Applied By The Scientific Community Include Controlled Study, Statistical Significance, Publication And Peer Review

In considering whether the foundation of an expert's opinion is credible, scientists are concerned whether the opinion is properly supported. They invariably ask: (1) Whether a controlled study has been performed?; (2) Were the results of the study statistically significant?; and (3) Was the study published in a peer-reviewed journal?

1. Has a "controlled" study been performed? Any study that purports to reach a conclusion as to how a substance or technique affects human beings must be controlled. That is, the outcome must be compared to some standard in order to determine what effect, if any, may be attributed to the technique or substance under study. Without a basis of comparison, no serious conclusions may be drawn from the study.[9] A leading textbook of epidemiology states:

> [T]he reader [of scientific studies] should always ask, *Compared to what*? This initial question will usually imply others, such as, *Was there a control or comparison group? Who constituted the control group? Were they similar to the treated group in all important respects other than the treatment*? The author [of the study] should have provided clear and satisfying answers to these questions in the paper. If not, there is good reason to doubt the claimed [results].

G. Friedman, *Primer of Epidemiology*, 241 (3d ed. 1987) (emphasis in original).

Controls are important because, in every branch of science, precautions must be taken so that conclusions are not drawn on the basis of factors that are irrelevant to the study. For example, people with Alzheimer's disease are much more likely

[9] "The effectiveness of a treatment can only be meaningfully assessed by evaluating its performance relative to some alternative or control treatment." T. Hassard, *Understanding Biostatistics*, 188 (1991).

to die than those without it, but that is not because Alzheimer's itself is fatal. Rather, it is because individuals with Alzheimer's tend to be much older than the average person. In the evaluation of medications and therapeutic measures, the principal precaution taken is the use of a control group. In a controlled study, a group of experimental subjects is given a certain regimen, and the outcome for that group is compared with the outcome for another nearly identical group, called the control group, that is not given the regimen. So in the Alzheimer's example, members of the control group would be the same age as members of the Alzheimer's group. What is essential is that the expert opinion be based on a comparison between those exposed and those not exposed to the substance or technique in question. Where a study is not controlled, there is no way of knowing to what to attribute the observations that result, and, hence, the scientific community will not seriously consider the findings of the study.

2. If the testimony is based upon a statistical study, were the results of the study statistically significant? Even if a controlled study shows a difference in outcome between the two groups, that difference might be due to chance alone. Thus, statistical analysis is performed to ascertain the odds that the outcome was likely to have been due to chance. A leading textbook of medical statistics states: "Among the statistical methods employed in medical research, tests of significance enjoy a preeminent position." D. Matthews and V. Farewell, *Using and Understanding Medical Statistics*, 11 (2d ed. 1988). It further notes that "a test of significance is a statistical procedure by which one determines the degree to which collected data are consistent with a specific hypothesis which is under investigation." *Id.*

Obviously, where testimony is based upon conclusions drawn from collected data, it is important to know how likely it is that those conclusions may legitimately be drawn from those data. In general, a certain odds level (usually 95%, or 19-to-one) is considered the threshold of statistical significance, and the results of a study are considered significant[10] only if the odds that the effect was due to the substance or technique in question are greater than the stated threshold. Statistically insignificant results may

[10] J. Last, *Maxcy - Rosenau Public Health and Preventive Medicine*, 50 (12th ed. 1986).

be interesting and considered suggestive by some, but they are universally considered inconclusive in the scientific community. While no particular threshold of statistical significance is implied by the Federal Rules of Evidence, a test of significance should be reported for all statistical studies upon which an expert relies as the basis of his or her testimony. Such tests of statistical significance should be made available to judges when they are determining the validity and reliability of the basis of an expert's testimony. If the results of a study are very likely due to chance, then such a study should not be considered valid and should not be admissible.

3. Was the study published in a peer-reviewed journal? Science does not generate exact knowledge with logical certainty. Instead, it relies on the give and take of criticism, testing, experimentation, and review to determine if it is valid. *See* Bert Black, A *Unified Theory Of Scientific Evidence*, 56 Fordham L. Rev. 595 (1988). Acceptance is the fundamental test scientists use to decide validity of theories and reasoning in any given context. Because acceptance is predicated on a process of refinement and critical review, communication among scientists is a necessity; hence, the importance of publication and peer review cannot be disregarded. Publication and peer review serve as an evidentiary threshold of validity in science. If a theory is not accepted anywhere in the scientific literature, strong doubts about its validity inevitably arise among the scientific community.

The peer review process is based upon established procedure in the scientific community. Once a scientific experiment is completed, the results are submitted to a scientific journal in the field. The journal sends the results, without information identifying the author, to several "referees", i.e., scientists recognized for their work in the relevant field. There are several factors that referees look for in deciding whether or not to approve a paper for publication. Most important, they attempt to assure that the paper meets scientific standards. There are two questions that referees ask in order to carry out this latter function. First, they ask whether the paper is consistent with the scientific method in the particular field. They will examine the methodology employed, the data obtained, the analyses performed, and the conclusions drawn by the authors. Second, they ask whether

the paper is internally consistent — whether the data presented in each part of the paper (including tables and graphs) supports the conclusions drawn, or whether the paper contradicts itself in any fashion. On this basis, the referees decide whether or not another draft is needed, and the results will be published only with the approval of the referees.[11]

It is only through this peer review process that courts can determine if an expert's opinion has a valid and reliable *basis*. However, publication and peer review is no guarantee of the validity of the *conclusions* of an experiment. In fact, papers having undergone peer-review have reached conclusions that have drawn justifiable criticism or have been disproved by later research. Nonetheless, no reputable scientist would credit a scientific result that had not gone through this peer review process. Publication in a peer-reviewed journal is thus a necessary element for scientific credibility.

A growing number of courts require that scientific evidence upon which an expert's testimony is based undergo peer review before it is allowed into evidence.[12] These courts' insistence upon publication and peer review reflects an acknowledgment of their inability to distinguish the disputes over methodology and design errors in scientific studies. Furthermore, these courts have adopted the publication and peer review requirements as

---

[11] *See* S. Lock, *A Difficult Balance: Editorial Peer Review in Medicine* (3d. ed. 1991).

[12] *See Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823 (D.C. Cir. 1988), *cert. denied*, 493 U.S. 882 (1989) (rejected an expert's testimony in part because the expert had neither published his recalculations nor offered them for peer review); *Lynch v. Merrell-National Laboratories Division of Richardson-Merrell, Inc.*, 830 F.2d 1190 (1st Cir. 1987) (rejected reanalysis of epidemiological data because it had never been published in a scientific journal or elsewhere, and, therefore, could not form the foundation for an expert opinion challenging scientific consensus); *Perry v. United States*, 755 F.2d 888 (11th Cir. 1985) (affirmed exclusion of an epidemiological study on swine flu because it had not been peer reviewed); *Ellis v. International Playtex, Inc.*, 745 F.2d 292 (4th Cir. 1984) (publication and survival of peer review is one further indication that the reliability of the contested data far exceeds that normally accorded preliminary data and speculation); *Johnston v. United States*, 597 F. Supp. 374 (D.C. Kan. 1984) (this court was disappointed with the apparent fact that the "so-called experts can take such license from the witness stand; these witnesses say and conclude things that in the Court's view, they would not dare report in a peer-reviewed journal").

surrogate screening devices. *See* Michael Green, *Expert Witnesses And Sufficiency Of Evidence In Toxic Substances Litigation: The Legacy Of Agent Orange And Bendectin Litigation*, 86 NW. U. L. Rev. 643 (1992). The insistence by these courts of the publication and peer review criteria also reflects a recognition that a jury on its own might well have difficulty in accurately assessing the strengths and weaknesses of such scientific data and methodology.

The real question is whether the courts, or juries themselves, can develop an equally refined screening mechanism as publication and peer review for determining the credibility of scientific studies. ACLM asserts that the answer to that question is a resounding "no." Without an evidentiary threshold of validity for evaluating the foundation of an expert's testimony, the enormously difficult task of distinguishing credible from incredible science will continually burden judges and juries and result in unfair awards based upon unreliable testimony.

D. The Determination Of The Validity And Reliability Of The Foundation Of An Expert's Testimony Cannot Be Made Solely By Application Of The Federal Rules Of Evidence.

When scientific testimony is proffered, the judge has an obligation to screen the testimony prior to trial.[13] *United States v. Eskow*, 422 F.2d 1060 (2d Cir. 1970), *cert. denied*, 398 U.S. 959 (1970). In the courts' search for truth, expert testimony should not be admitted unless there are objective indicia that the testimony is valid and reliable. In essence, the court is the filter by which the purity of scientific truths can be evaluated and then allowed to be judged by the trier of fact. In making its determination as to this preliminary question of fact under Federal Rules of Evidence Rule 104(a), a court is not bound by the rules of evidence, except the rules of privilege. *United States v. Haldeman*, 559 F.2d 31 (D.C. Cir. 1976), *cert. denied*, 431 U.S. 933 (1977). While Rule 104(a) recognizes the court's ability to receive all relevant evidence and to discount evidence that is

[13] Rule 104(a) entrusts all preliminary questions concerning the admissibility of evidence to the trial court, and expressly frees trial-court judges from the rules of evidence in making that determination.

untrustworthy or suspicious, it permits "filtering" without uniform standards. *Seiler v. Lucasfilm, Ltd.*, 797 F.2d 1504 (9th Cir. 1986), *modified*, 808 F.2d 1316 (9th Cir. 1986), *cert. denied*, 484 U.S. 826 (1987). The resulting problems have been discussed above. By applying the balanced criteria recognized by the scientific community set forth herein, the courts will have a more consistent road map when making a determination as to the trustworthiness of the basis of an expert's scientific testimony.

In screening expert testimony, judges are guided by Federal Rules of Evidence 401, 702, 703 and 403. These Rules, too, however, provide only a framework and insufficient guidance for judges faced with the task of determining whether the foundation of an expert's testimony is reliable and, therefore, relevant, useful to the jury and credible.

Rule 401 defines *relevant* evidence as "having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." In drafting the Rules, the Advisory Committee rejected the formulation of relevancy found in the Uniform Rules of Evidence (1953) because it overemphasized the "logical process" to the detriment of the "experience of science." *See* Advisory Committee's Notes accompanying FRE 401.

Relevancy encompasses questions about both the validity of the scientist's reasoning and the reliability of his conclusions. *See* Bert Black, *A Unified Theory of Scientific Evidence*, 56 Fordham L. Rev. 595 (1988). Black explains the distinction between validity and reliability as follows:

> Validity and reliability, though intertwined, are very different concepts. One normally speaks of "valid" rather than "reliable" reasons or theories, and of "reliable" rather than "valid" instruments or machines. Reliability means that a successful outcome, or a correct answer, is sufficiently probable for a given situation. In contrast to reliability, validity means that which results from sound and cogent reasoning. An invalid conclusion cannot be reliable, yet valid reasoning does not necessarily lead to reliable conclusions. Reliability is the ultimate legal concern,

> but when it hinges on controversial, contested reasoning, the validity of the reasoning must be addressed. *Id.* at 599.

Whether scientific testimony is valid depends upon accepted scientific practice and the soundness of the reasoning leading to the expert's conclusion. Analyzing the validity of an expert's methodology or reasoning involves determining whether the facts are connected to the expert's conclusion in a scientifically valid way. This, in turn, is decided by determining whether a reasonable scientist in the field would find the methodology, or mode of reasoning, used by the expert relevant to the conclusions drawn by the expert. *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106, 1111 (5th Cir. 1991) (per curiam), *cert. denied*, 112 S. Ct. 1280 (1992).

It is apparent, then, that judges cannot simply rely on "logic" and "experience" alone to evaluate the relevance of scientific testimony but, rather, must turn to science for assistance and solicit information bearing on the validity and reliability of the foundation of the testimony. Accordingly, the courts' threshold for determining reliability should be no less than and no greater than that recognized by the scientific community.

Rule 702 states that expert testimony is admissible "if scientific, technical or other specialized knowledge will *assist the trier of fact*" in understanding the issues and the witness is qualified as an expert. The "assist-the-trier-of-fact" test subsumes a relevancy analysis which, in turn, assumes a threshold of reliability. *United States v. Jakobetz*, 955 F.2d 786, 796 (2d Cir. 1992) *citing*, 3 Weinstein & Berger, *Weinstein's Evidence*, 702[02] at 18. Rule 702, therefore, supports the proposition that expert testimony based upon a technique or methodology which is not scientifically credible, is unhelpful, and, therefore, excludable. *See Slaughter v. Southern Talc Co.*, 919 F.2d 304, 307 (5th Cir. 1990); *United States v. Downing*, 753 F.2d 1224 (3d Cir. 1985). Nowhere does the language of the Federal Rules of Evidence guide the courts in their task of determining scientific credibility. The criteria set forth herein would fill this void and enable the courts

to carry out their function in a more consistent manner under the Federal Rules of Evidence.[14]

Moreover, Federal Rule 703 requires the court to examine, as a threshold matter, the reasonableness of the expert's reliance on his or her data or methodology.[15] This examination necessarily entails consideration of the validity and reliability of the data or methodology. Rule 703 highlights the need for information regarding the trustworthiness, *i.e.*, the validity and reliability of the sources relied upon by an expert in forming his opinion, by noting:

---

[14] The Committee on Rules of Practice and Procedure of the Judicial Conference of the United States has recognized the need to revise Rule 702. Its proposed changes to the language of Rule 702 state:

> Testimony providing scientific, technical, or other specialized information, in the form of an opinion or otherwise, may be permitted only if (1) the information is *reasonably reliable* and will *substantially assist* the trier of fact to understand the evidence or to determine a fact in issue and (2) the witness is qualified as an expert by knowledge, skill, experience, training, or education to provide such testimony . . . (emphasis added)

These changes, however, do nothing to clarify the evidentiary threshold. They still do not provide the courts with the guidance needed in determining whether the bases of the expert's opinions are scientifically credible, and, therefore, relevant, useful to the trier of fact and more probative than prejudicial. *See Fix the Law of Experts*, Litigation, Fall 1992, Vol. 19, No. 1 at 21-22.

[15] Although the proposed Federal Rules of Evidence reflect a general trend toward more liberal admission of evidence, the commentary to Proposed Rule 703, regarding Bases of Opinion Testimony by Experts, suggests that the drafters intended to preserve judicial power to exclude particular categories of "expert testimony":

> If it be feared that enlargement of permissible data may tend to break down the rules of exclusion unduly, notice should be taken that the rule requires that the facts or data "be of a type reasonably relied upon by experts of a particular field." The language would not warrant admitting in evidence the opinion of an "accidentologist" as to the point of impact in an automobile collision based on statements of bystanders, since this requirement is not satisfied.

The House of Representatives' version of the Federal Rules of Evidence, approved on February 6, 1974, retains Rule 703 in the same form as promulgated by the Supreme Court. See H.R. 5463, 93d Cong. 1st Sess. (1974). *United States v. Addison*, 498 F.2d 741, 743 n.5 (D.C. Cir. 1974).

> The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to him at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.

The second sentence of Rule 703 aims to bring expert witness practice in the courtroom in line with that of experts in their respective professions. *See* Advisory Committee's Notes accompanying Fed. R. Evid. 703. Rule 703 allows an expert to rely on any basis, otherwise admissible into evidence or not, as long as other experts in the field would "reasonably" rely upon that basis. *See Viterbo v. Dow Chemical Co.*, 826 F.2d 420 (5th Cir. 1987); *Renaud v. Martin Marietta Corp.*, 749 F. Supp. 1545 (D.C. Colo. 1990), *aff'd*, 972 F.2d 304 (10th Cir. 1992); In Re *"Agent Orange" Product Liability Litigation*, 611 F. Supp. 1223 (E.D.N.Y. 1985), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied, sub. nom, Lomardi v. Dow Chemical Co.*, 487 U.S. 1234 (1988); *Zenith Radio Corp. v. Matsushita Electric Industrial Co., Ltd.*, 505 F. Supp. 1313 (E.D. Pa. 1980).

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 727 F. Supp. 570 (S.D. Cal. 1989), *aff'd*, 951 F.2d 1128 (9th Cir. 1991), *cert. granted*, 113 S.Ct. 320 (1992), the defendant presented evidence that of 30 published studies involving over 130,000 patients, not one published epidemiologic study had demonstrated a statistically significant association between Bendectin and birth defects. Plaintiffs' evidence of causation consisted primarily of expert opinion based upon in vitro and in vivo animal tests, chemical structure analyses and the reanalysis of epidemiologic studies. The district court correctly determined that plaintiffs could not meet their burden of proving Bendectin caused birth defects and granted defendant's motion for summary judgment. *Id.*, at 576. The study upon which the plaintiffs relied was simply a recalculation of the data from a previously published epidemiologic study. The "recalculation study," however, was never published nor subject to peer review, and it did not meet the level of confidence to be deemed statistically significant. Therefore, the court ruled the evidence insufficient to take this

matter to a jury. *Id.* The Ninth Circuit affirmed, reiterating that the courts are unwilling to allow plaintiffs to rely on the reanalysis of epidemiologic studies because the reanalysis had neither been published nor subjected to the rigors of peer review especially in light of the massive weight of the original published studies supporting the defendant's position, all of which had undergone full scrutiny from the scientific community. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 951 F.2d 1128, 1131 (9th Cir. 1991). Thus, the recalculation study by plaintiff's expert was not "of a type reasonably relied upon by experts in the particular field."

Finally, Federal Rule of Evidence 403 provides that expert opinions must have a foundation sufficient to make the evidence more probative than prejudicial. If an opinion is fundamentally unsupported by valid and reliable methodology, then it offers no expert assistance to the trier of fact, and that lack of reliable support renders an opinion substantially more prejudicial than probative. *Viterbo v. Dow Chemical Co.*, 826 F.2d 420 (5th Cir. 1987).

Rule 403 requires courts to balance the probative value of otherwise admissible scientific testimony against its potential to mislead the jury. *United States v. Krulewitch*, 145 F.2d 76, 80 (2d Cir. 1944). Determining the extent to which a jury may be misled by invalid expert testimony requires an understanding of the limitations of that testimony. This, in turn, requires knowledge of the methodology or research design, and renders the court dependent upon the expert's assertions. Hence, the bases of an expert's testimony must be credible from the start. Overstatements by experts about the validity and reliability of their methods and conclusions are common. For example, neutron activation analysis has been characterized as being as infallible as fingerprints. *State v. Spencer*, 216 N.W.2d 131, 133-134 (Minn. 1974). Similarly, other overstated assertions have been made for bitemark[16], voiceprint evidence [17], DNA profiling[18], and psychological stress evaluators (PSE)[19]. Application of the criteria set

---

[16] *State v. Garrison*, 585 P.2d 563, 566 (Ariz. 1978).

[17] *People v. Kelly*, 549 P. 2d 1240 (Cal. 1976).

[18] *United States of America v. Two Bulls*, 918 F.2d 56 (8th Cir. 1990).

[19] *Smith v. State*, 355 A.2d 527, 535 (Md. Ct. Spec. App. 1976)

forth herein would assist the courts in determining whether the evidence is reliable or if it would mislead the jury.

CONCLUSION

The federal courts have inconsistently applied the Federal Rules of Evidence with respect to the foundation of scientific, expert testimony. ACLM suggests that the solution to this problem is to work within the framework of the Rules, which allow for judicial discretion, and to set forth specific criteria to assist judges in determining whether the foundation of an expert's testimony is reliable and, therefore, whether the testimony is relevant, useful to the trier of fact and more probative than prejudicial.

In the interest of allowing the trier of fact to consider expert scientific testimony that leads to the discovery of truths, ACLM does not suggest that the threshold of validity and reliability be impossibly high. Rather, it should be understood as asking the court to adopt the criteria employed by scientists in the field to determine if the proffered scientific testimony and its underpinnings are reliable and valid. A controlled study, statistical significance, publication and peer review are objective indicia upon which reasonable scientists credit the work relied upon by an expert.

The epidemiological testimony that was proffered in *Daubert* clearly did not meet these criteria, and the Ninth Circuit's decision should be affirmed. The testimony was not credited by reasonable epidemiologists and, therefore, was not valid and reliable and was properly excluded. The focus here is upon the soundness and cogency of the bases of the opinions of those seeking to render scientific testimony. By adopting the balanced criteria suggested herein, the courts will gain a clearer understanding

of the strengths and weaknesses of the foundation of an expert's scientific testimony, and, therefore, fulfill the full intent of the Federal Rules of Evidence.

Respectfully submitted,

MILES J. ZAREMSKI, ESQ.
Counsel of Record
ELAINE RAPPAPORT LEV, ESQ.
DEBORAH H. SHEFRIN, ESQ.
ARNSTEIN & LEHR
120 S. Riverside Plaza
Suite 1200
Chicago, IL 60606
(312) 876-7100

JAY A. GOLD, M.D., J.D., MPH, FCLM
AMERICAN COLLEGE OF LEGAL MEDICINE
611 E. Wells Street
Milwaukee, WI 53202-3810
(414) 276-1881

Counsel for Amicus Curiae

APPENDIX

BEST AVAILABLE COPY

ARNSTEIN & LEHR

120 SOUTH RIVERSIDE PLAZA SUITE 1200 CHICAGO, ILLINOIS 60606-3913

(312) 876-7100

FAX (312) 876-0288
TELEX 910-221-1142

BARRINGTON, ILLINOIS

WEST PALM BEACH, FLORIDA

MILWAUKEE, WISCONSIN

Elaine Rappaport Lev
(312) 876-7844

December 11, 1992

VIA FEDERAL EXPRESS

Kenneth J. Chesebro, Esq.
1600 Massachusetts Avenue
Cambridge, MA 02138

RE: Daubert v. Merrell Dow Pharmaceuticals Inc.

Dear Mr. Chesebro:

In our phone conversation today, I informed you that our client, the American College of Legal Medicine, wishes to file an amicus brief with the United States Supreme Court in the above-captioned action.

Pursuant to the Supreme Court rules, we request your consent in that regard. Please sign this letter below and return it to my attention.

Very truly yours,

Elaine Rappaport Lev

ERL:haf

HSF/ERL12-11-1

I, Kenneth J. Chesebro, counsel of record for the Petitioners in the above-captioned matter hereby consent to the filing of an amicus brief by the American College of Legal Medicine in this case.

Kenneth J. Chesebro

APPENDIX A-1

BEST AVAILABLE COPY

KLEIN, FARR, SMITH & TARANTO
2550 M STREET, N. W.
SUITE 350
WASHINGTON, D. C. 20037-1311

H. BARTON FARR III
JOEL I. KLEIN
PAUL M. SMITH
RICHARD G. TARANTO

TELEPHONE
(202) 775-0184

TELECOPIER
(202) 293-6979

December 8, 1992

Elaine Rappaport Lev
Arnstein & Lehr
120 S. Riverside Plaza
Suite 1200
Chicago, IL 60606

RE: Daubert v. Merrell Dow, No. 92-102

Dear Ms. Lev:

On behalf of Respondent, I hereby consent to the filing of an amicus brief by the American College of Legal Medicine in this case.

Sincerely,

Richard G. Taranto

Richard G. Taranto
One of Respondent's Counsel

RGT:tj

APPENDIX A-2

BEST AVAILABLE COPY